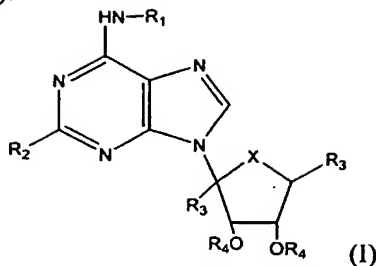


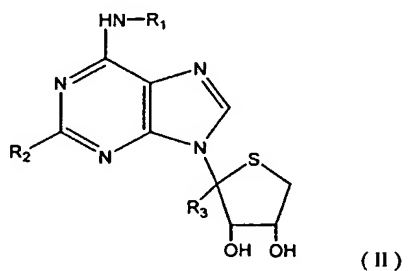
## WHAT IS CLAIMED IS:

1. A compound of formula (I):

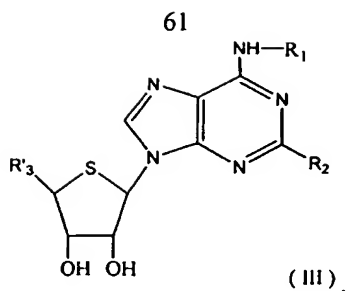


wherein X is sulfur or oxygen; R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, benzyl, halobenzyl, or phenyl C<sub>1</sub>-C<sub>5</sub> alkyl; R<sub>2</sub> is hydrogen, halogen, C<sub>1</sub>-C<sub>5</sub> alkoxy group, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>5</sub> alkylthio, or thio; R<sub>3</sub> and R<sub>3</sub>' are same or different and are hydrogen, hydroxy C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>1</sub>-C<sub>5</sub> alkoxycarbonyl, or C<sub>1</sub>-C<sub>5</sub> alkylaminocarbonyl; R<sub>4</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub> alkyl; or a pharmaceutically acceptable salt or isomer thereof.

2. The compound of claim 1, wherein X is sulfur.
3. The compound of claim 1 or 2, wherein R<sub>3</sub> and R<sub>3</sub>' are different.
4. The compound of claim 2, which has the formula (II) or an isomer thereof:

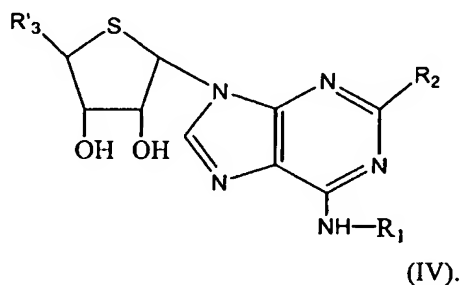


5. The compound of claim 4, which is (2R,3S,4R)-2-[2-chloro-6-(3-iodobenzylamino)purin-9-yl]-3,4-dihydroxytetrahydrothiophene-2-carboxylic acid methyl amide.
6. The compound of claim 2, which has the formula (III) or an isomer thereof:



7. The compound of claim 6, wherein said compound is selected from the group consisting of (2R,3R,4S,5R)-2-[2-chloro-6-(3-iodobenzylamino)purin-9-yl]-5-hydroxymethyltetrahydrothiophene-3,4-diol, (2R,3R,4S,5R)-2-(2-chloro-6-methylaminopurin-9-yl)-5-hydroxymethyl-tetrahydrothiophene-3,4-diol, (2R,3R,4S,5R)-2-(2-chloro-6-methylaminopurin-9-yl)-5-hydroxymethyltetrahydrothiophene-3,4-diol, (2S,3S,4R,5R)-5-(6-amino-2-chloro-purin-9-yl)-3,4-dihydroxytetrahydrothiophene-2-carboxylic acid methyl amide, (2S,3S,4R,5R)-5-(2-chloro-6-methylaminopurin-9-yl)-3,4-dihydroxytetrahydrothiophene-2-carboxylic acid methyl amide, and (2S,3S,4R,5R)-5-[2-chloro-6-(3-iodobenzylamino)purin-9-yl]-3,4-dihydroxytetrahydrothiophene-2-carboxylic acid methyl amide.

8. The compound of claim 2 having the general formula (IV) or an isomer thereof:



9. The compound of claim 8, which is (2S,3R,4S,5R)-2-[2-chloro-6-(3-iodobenzylamino)purin-9-yl]-5-hydroxymethyltetrahydrothiophene-3,4-diol.

10. A pharmaceutical composition comprising a compound of any one of claims 1 to 9 and a pharmaceutically acceptable carrier.

11. Use of a compound of any one of claims 1 to 9 for the manufacture of a medicament for the treatment of cancer or inflammatory disease.

12. A method of treating or preventing in an animal a disease, state, or condition which is responsive to agonizing or antagonizing an  $A_3$  adenosine receptor comprising administering to the animal an effective amount of a compound of any one of claims 1 to 9.
13. The method of claim 12, wherein the disease, state, or condition is cancer.
14. The method of claim 13, wherein the cancer is lung cancer or skin cancer.
15. The method of claim 12, wherein the disease, state, or condition is an inflammation.
16. A compound of any one of claims 1 to 9 for use in medicine.